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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,393	09/03/1999	HISASHI OHTANI	07977/204002	5375

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WASHINGTON, DC 20005-3500

EXAMINER
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BAUMEISTER, BRADLEY W

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/389,393

Applicant(s)

OHTANI, HISASHI

Examiner

B. William Baumeister

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 44-84 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 44-84 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/3/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 11/26/2003. These drawings are not approved.
2. Applicant proposed to amend the specification to clarify that newly submitted FIG 5 depicts a bottom-gate TFT embodiment. Newly presented FIG 5 sets forth new matter because the specification as originally filed did not disclose for a bottom-gate TFT:
  - a. The source/drain regions being aligned to the anodic oxide sidewall of the second metal layer.
  - b. The source/drain regions being laterally spaced from the first metal extending region (or restated, providing the semiconductor region with a pair of regions having second portions that are not overlapped by the first conductive layer).
  - c. The additional presence of an SiO<sub>x</sub> insulating layer between the semiconductor channel and the second gate metal.
  - d. That (or how) the second gate metal will be oxidized to provide an anodic film only on the side surfaces, but not on the top surface, of the second gate metal.
  - e. That (or how) an anodic oxide will form across the entire length of the first metal layer's bottom surface.
3. The independent claims each set forth that the first conductive layer is provided over an insulating surface. In the bottom-gate embodiment, the insulating surface would read on a structure such as an insulating substrate (as opposed to the anodic oxide of the first metal layer) because extrapolating the specification's disclosure to a bottom-gate embodiment, the first gate metal would be formed on the insulating substrate and subsequently oxidized such that the

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anodic oxide is formed only on the side surfaces—not across the bottom surface. Since the claimed insulating surface must be a structure other than the anodic oxide layer, the drawings are objected to because the drawings must show every feature of the invention specified in the claims. Therefore, the insulating surface must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### *Claim Objections*

4. The following claims are objected to because of the following informalities:
  - a. Claim 44 (and those depending therefrom) states: “wherein the first conductive layer and the second conductive layer are different material [sic: materials] from] each other.
  - b. Claims 61-66 do not set forth units for the recited thickness ranges. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The claims are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- a. Regarding claims 1 and 44-48 (and those claims depending therefrom), the specification as originally filed did not disclose for a bottom-gate type TFT that extending portions of the first conductive layer overlap the first portions of said pair of regions while the second portions are not overlapped by said first conductive layer.
- b. Regarding claims 45-48 (and those claims depending therefrom), the specification as originally filed did not disclose for a bottom-gate type TFT that a distance between the first portion and the source or drain region is larger than a thickness of the second conductive layer.
- c. Regarding claims 67-72, the specification as originally filed did not disclose an SiO<sub>x</sub> insulating layer interposed between the upper gate metal and the bottom of the semiconductor region in a bottom-gate type TFT.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 49-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims each recite the limitation "wherein a [sic: an] anodic oxide layer is formed on at least side surface [sic] of the first conductive layer and side surface [sic] of the second conductive layer." It is unclear whether Applicant intended "on at least a side surface"

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(singular, indicating that the anodic oxide need not be on both side surfaces) or alternatively, “on at least side surfaces” (plural, indicating that the anodic oxide must be on both side surfaces, but need not be on the top surfaces). As such, the skilled artisan would not be reasonably apprised of the objective metes and bounds intended to be claimed.

### *Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

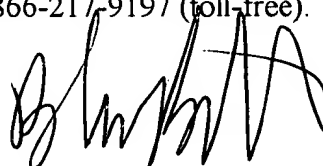
### *Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. William Baumeister whose telephone number is (571) 272-1722. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



B. William Baumeister  
Primary Examiner  
Art Unit 2815

May 15, 2004

**BRADLEY BAUMEISTER**  
**PRIMARY EXAMINER**